Transport for NSW

TO: Project Director, North West Rail Link

FROM: Manager, Precinct and Place, Rapid Transit Integration

DATE: 8 September 2014

PRIORITY: HIGH

RECOMMENDATION FOR PLANNING APPROVAL FOR THE LINDFIELD SUBSTATION UNDER PART 5 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

PURPOSE

To sign the approval instrument subject to conditions of approval for the construction and operations of the Lindfield Substation, under Part 5 of the *Environmental Planning and Assessment Act 1979.*

BACKGROUND

A Review of Environmental Factors (REF) was prepared to assess the construction and operations of the Lindfield substation.

The REF was placed on public exhibition from 28 July 2014 to 11 August 2014. It was published on the Transport for NSW website and exhibited at the following locations:

- Transport for NSW Information Centre, 388 George Street, Sydney NSW
- Ku-Ring-Gai Council Chambers, 818 Pacific Highway, Gordon NSW
- Lindfield Library, 265 Pacific Highway, Lindfield NSW.

A community information session was held in Lindfield on 29 July 2014 to discuss elements of the proposal with members of the local community

CURRENT SITUATION

A total of four submissions were received and a Submissions Report has been prepared, outlining responses to issue raised.

No changes or modifications are proposed as a result of the exhibition process and conditions of approval have been developed to accompany the approval.

A Determination Report has been prepared which contains the Submissions Report, approval sign off sheet and the conditions of approval. (See attachment A).

The conditions of approval have been prepared by the Principal Manager, Sustainability Environment & Planning and Manager Precinct and Place and have been reviewed and agreed to by Warren Richards.

RECOMMENDATION

That the Project Director:

- **APPROVE** the construction and operations of the Lindfield Substation in accordance with the conditions of approval
- **SIGN** the approval instrument in the Determination Report.

RECOMMENDATION FOR PLANNING APPROVAL FOR THE LINDFIELD SUBSTATION UNDER PART 5 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Signed ✓

PETER BOURKE
Manager, Precinct and Place, Rapid Transit Integration
North West Rail Link

DATE

TOM GELLIBRAND
Deputy Project Director, Rapid Transit Integration
North West Rail Link

DATE 12/9/14

RODD STAPLES
Project Director
North West Rail Link

APPROVED / **NOT APPROVED** / **NOTED**

19/9/14

Attachment A

Lindfield Substation Determination Report

Transport for New South Wales (TfNSW)

Lindfield Substation

Determination Report 2014

Project	Lindfield Substation
Division	Transport for NSW
Document	Lindfield Substation - Determination Report
Date	11 September 2014
Status	Final
Author	Peter Bourke
Document reference no	A3718198

Contents

1 Introduction

Transport for NSW (TfNSW) is the proponent for the proposed new traction power substation at Lindfield (Proposed Activity), to allow for the increase of train services on the North Shore Line.

The substation site (where the substation would be constructed) is located on Lindfield Avenue at the intersection with Strickland Avenue in Lindfield, approximately 300 metres to the south of Lindfield Station. The site is within the existing rail corridor between the North Shore Line up-track (i.e. travelling towards Sydney central business district (CBD)) and Lindfield Avenue. In addition, the works comprise ancillary electrical works, including the installation of aerial earth wires to existing power poles generally between Killara Station and Russell Avenue, Lindfield and the realignment of existing overhead wiring generally between Russell Avenue and the Clanville Road overbridge

A Review of Environmental Factors (REF) was prepared by Parsons Brinckerhoff (22 July 2014) to assess the potential environmental impacts of the Proposed Activity. The REF was placed on public display for a period of 15 days, commencing 28 July 2014 to 11 August 2014. Refer to Appendix 1.

A Submissions Report prepared by Parsons Brinckerhoff (8 September 2014) documents the responses to issues raised in submissions resulting from display of the REF. Refer to Appendix 2.

In order for the Proposed Activity to proceed, TfNSW must make a determination in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The objectives of this Determination Report are to:

- Assess the environmental impacts in respect of the Proposed Activity, which are detailed in the REF;
- Determine the significance of those impacts; and
- Address the relevant matters under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in respect to the Proposed Activity.

This report has been prepared having regards to, among other things, the objective of TfNSW under the *Transport Administration Act 1988* to conduct its operations in compliance with the principles of ecologically sustainable development contained in Section 6(2) of the *Protection of the Environment Administration Act 1991*.

2 Description of the proposed activity in the REF

An overview of the Proposed Activity, which is the subject of the REF, is provided in the Executive Summary of the REF with full details set out in Chapter 5 of the REF (refer Appendix 1).

No design changes have occurred following the public exhibition of the REF.

A detailed Submissions Report outlines responses to submissions made during the exhibition process.

The Proposed Activity as described in the REF includes:

Key features of the proposal

The proposal comprises the construction of a new substation building, and installation of associated wiring, cabling and substation equipment. The key features of the proposal comprise the following:

- Construction and operation of a new traction power substation at Lindfield in order to continue to power the Sydney trains network (in particular the North Shore Line). Components of the substation would generally include:
  - construction of two new rectifier transformers
  - installation of switchgear room containing switchgear and switchboards, batteries and changers, voice and data communications equipment
  - installation of the rectifier and reactor unit(s)
  - office and associated facilities
- Realignment of the existing 33 kilovolt (kV) and 11 kV overhead wiring (OHW), to a new combined services route (CSR) generally between power pole P57 (to the south of Lindfield Station near the intersection with Russell Avenue) and power pole P49 (to the north of the Clanville Road overbridge)
- Relocation and installation of signalling cable and communication cable to the substation to connect with existing cables along the North Shore Line
- Construction of a new driveway access to the substation site from Lindfield Avenue and a paved surface area to provide for car parking for approximately four vehicles within the proposed substation compound
- Lighting within and external to the building would consist of security and permanent maintenance lighting
- Landscaping and vegetation surrounding the proposed substation building, generally to the east and south of the substation
- Installation of feeder and return cabling to the OHW system on the North Shore Line
- Installation of an aerial earth wire to the top of the existing (Sydney Trains) poles, generally between Russell Avenue, Lindfield and Killara Station

- Relocation of street lighting and power routes to provide access to the substation for construction and maintenance (including future replacement of substation equipment).

The need for the Proposed Activity is outlined in Chapter 1 of the REF.

3 Consideration of the environmental impacts

The REF has been examined and considered, as follows:

Environmental Planning and Assessment Act (EP&A Act) 1979

The REF addresses the requirements of Section 111 of the EP&A Act. In considering the Proposed Activity, all matters affecting or likely to affect the environment are addressed in the REF and associated documentation.

In accordance with the checklist of matters to be considered under clause 228 of the *Environmental Planning and Assessment Regulation 2000*, an assessment is provided in section 8.3 of the REF.

In respect of the Proposed Activity an assessment has been carried out on critical habitat and on threatened species, populations or ecological communities or their habitats, under Section 112 of the EP&A Act. The likely significance of the environmental impacts of the Proposed Activity has been assessed in accordance with the Department of Planning and Infrastructure's best practice guideline '*Is an EIS Required?*' and is not likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitat. Accordingly, an Environmental Impact Statement (EIS) is not required.

Environment Protection and Biodiversity Conservation Act (EPBC) 1999

As part of the consideration of the Proposed Activity, all matters of National Environmental Significance (NES) and any impacts on Commonwealth land for the purposes of the EPBC Act have been assessed. In relation to NES matters, this evaluation has been undertaken in accordance with Commonwealth Administrative Guidelines on determining whether an action has, will have, or is likely to have a significant impact. Table 8.3 in section 8.4 of the REF provides a summary checklist of national environmental significance that was considered for the proposal under the EPBC Act 1999.

It is considered that the Proposed Activity described in the REF is not likely to have a significant impact on any Commonwealth land and is not likely to have a significant impact on any NES matters.

Issues raised in submissions

The REF was publicly displayed from 28 July 2014 to 11 August 2014. Written submissions were accepted until 18 August 2014. Transport for NSW received four submissions in response to the public display of the REF, and a summary of these are provided within the Submissions Report in Appendix 2.

The issues raised in these submissions have been fully addressed in the Submissions Report.

4 Conditions of approval

The Determination is subject to compliance with the Conditions of Approval (CoA) included as Appendix 3.

5 Conclusion

Having regard to the assessments in the REF and the Submissions Report, it is concluded that the Proposed Activity is not likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats.

Consequently, an EIS is not required to be prepared under Part 5.1 of the EP&A Act.
It is also considered that the Proposed Activity does not trigger the approval regime under Part 3 of the Commonwealth EPBC Act.

The environmental impact assessment (REF and Submissions Report) is recommended to be approved subject to the proposed mitigation and management measures included in Section 7.2 of the REF and the Conditions of Approval contained in this Determination Report.

6 Approval

ENVIRONMENTAL IMPACT ASSESSMENT

Lindfield Substation

REVIEW OF ENVIRONMENTAL FACTORS APPROVAL

I, RODD STAPLES, Project Director, North West Rail Link, state as follows:

1. I have examined and considered the Proposed Activity in the Review of Environmental Factors (Parsons Brinkerhoff, 22 July 2014) and Submissions Report (Parsons Brinkerhoff, 8 September 2014) in accordance with s 111 of the *Environmental Planning and Assessment Act 1979*.

2. I determine on behalf of the Transport for NSW (the Proponent) that the Proposed Activity may be carried out in accordance with the Conditions of Approval in this Determination Report, consistent with the proposal described and mitigated in the Review of Environmental Factors (Parsons Brinkerhoff, 22 July 2014) and Submissions Report Submissions Report (Parsons Brinkerhoff, 8 September 2014).

Rodd Staples

Project Director
North West Rail Link

Date: 19/9/14

Appendix 1 Review of Environmental Factors (REF)

Appendix 2 Submissions Report

Transport for NSW

Lindfield Substation Review of Environmental Factors

Submissions Report

11 September 2014

PARSONS BRINCKERHOFF

Document information

Client: Transport for NSW
Title: Lindfield Substation Review of Environmental Factors
Subtitle: Submissions Report
Document No: 2176502A-RPT-REP-7641 Rev FINAL
Date: 11 September 2014

Rev	Date	Details
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Author, Reviewer and Approver details

Prepared by:	Jarryd Barton	Date: 11/09/2014	Signature:
Reviewed by:	Verity Humble-Crofts	Date: 11/09/2014	Signature:
Approved by:	Paul Greenhalgh	Date: 11/09/2014	Signature:

Distribution

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Parsons Brinckerhoff Australia Pty Limited

ABN 80 078 004 798

Level 27 Ernst & Young Centre
680 George Street
Sydney NSW 2000
GPO Box 5394
Sydney NSW 2001
Australia
Tel: +61 2 9272 5100
Fax: +61 2 9272 5101
www.pbworld.com

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Contents

Glossary

ASA	Asset Standards Authority
BGHF	Blue Gum High Forest
CBD	central business district
CSR	A combined services route (CSR) is a technical railway term used to described the buried pipe or enclosed box (typically a steel box fixed to a pole approximately one metre high) that holds the signalling, communication and electrical cables running along the railway corridor
DC	direct current
Down-track	Refers to the line on which trains travel away from Sydney away from Chatswood Station and the Sydney CBD towards Lindfield Station
EEC	Endangered Ecological Community
LGA	local government area
kV	kilovolt
NSW	New South Wales
NWRL	North West Rail Link
OHW	overhead wiring
REF	Review of Environmental Factors
Roads and Maritime	(NSW) Roads and Maritime Services
Transport for NSW or TfNSW	Transport for New South Wales
Up-track	Refers to the line on which a train travels toward the city away from Lindfield Station towards Chatswood Station and the Sydney CBD

1. Introduction

1.1 Background

The NSW Government has developed a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers into the future. The NSW Government has identified that Sydney's rail system is reaching the limits of its capacity. In future, Sydney Trains intends to operate increasing train services on the North Shore Line. A new traction power substation is required to allow for this increase in capacity and will support the delivery of the North West Rail Link (NWRL).

Transport for NSW is proposing to construct a new substation at Lindfield to supply additional traction power to the North Shore Line. The proposal also includes ancillary electrical works generally between Killara Station and the Clanville Road overbridge in Lindfield. Transport for NSW prepared a Review of Environmental Factors (REF) dated 22 July 2014 (Parsons Brinckerhoff 2014) which was placed on public exhibition for review and comment between 28 July and 11 August 2014.

1.2 Proposal site and location

The proposal site lies wholly within the Ku-Ring-Gai local government area (LGA). The substation site is located on Lindfield Avenue at the intersection with Strickland Avenue in Lindfield, approximately 300 metres to the south of Lindfield Station. The site is within the existing rail corridor between the North Shore Line up-track (i.e. travelling towards Sydney central business district (CBD)) and Lindfield Avenue. In addition, the works comprise ancillary electrical works, including the installation of aerial earth wires to existing power poles generally between Killara Station and Russell Avenue, Lindfield and the realignment of existing overhead wiring generally between Russell Avenue and the Clanville Road overbridge.

1.3 Key features of the proposal

The key features of the proposal (comprising the construction and operation of the substation and ancillary works) would include:

- construction and operation of a new traction power substation at Lindfield in order to continue to power the Sydney Trains network (in particular the North Shore Line). Components of the substation would generally include:
  - construction of two new rectifier transformers
  - installation of switchgear room containing switchgear and switchboards, batteries and changers, voice and data communications equipment
  - installation of the rectifier and reactor unit(s)
  - office and associated facilities
  - earthworks and construction of a retaining wall on the western side of the substation site, adjacent to the rail line
- construction of a new driveway access to the substation site from Lindfield Avenue and a paved surface area to provide car parking for approximately four vehicles within the proposed substation compound
- security and permanent maintenance lighting within and external to the building
- landscaping and vegetation surrounding the proposed substation building, generally to the east and south of the site

- realignment of the existing 33 kilovolt (kV) and 11 kV overhead wiring (OHW), to a new combined services route (CSR), generally between power pole P57 (to the south of Lindfield Station near the intersection with Russell Avenue, Lindfield and power pole P49 (to the north of the Clanville Road overbridge)
- relocation and installation of signalling cable and communication cable to the substation to connect with existing cables along the North Shore Line
- installation of feeder and return cabling to the OHW system on the North Shore Line
- installation of an aerial earth wire to the top of the existing (Sydney Trains) power poles, generally between Killara Station and Russell Avenue, Lindfield
- relocation of street lighting and power routes to provide access to the substation for construction and maintenance (including future replacement of substation equipment).

The REF assessed the construction and operational environmental impacts of the proposed traction substation and ancillary electrical works at Lindfield. The key potential impacts associated with the proposal would likely comprise:

- vegetation removal
- construction and operational noise impacts
- visual impacts
- construction traffic impacts.

The REF considered that that the adverse environmental impacts would be generally localised in nature. With the implementation of proposed mitigation and management measures specified in Chapter 7 of the REF, the potential environmental impacts of the proposal were considered to be adequately mitigated and managed, and were not considered to be significant.

1.4 Purpose of this report

This Submissions Report relates to the REF prepared for the proposed construction of a new traction substation and associated ancillary works at Lindfield (Parsons Brinckerhoff 2014) and should be read in conjunction with that document.

The REF was publicly exhibited for a period of 10 business days between 28 July and 11 August 2014. Four submissions relating to the proposal and the REF were received by Transport for NSW during this period. This Submissions Report provides a summary of the consultation and community engagement undertaken during the exhibition period (Chapter 2) and summarises the submissions raised and provides responses to each issue (Chapter 3).

2. Consultation

2.1 Exhibition process

The REF for the Lindfield Substation was placed on public exhibition between 28 July and 11 August 2014. All written comments received during this period from government, agencies and the public were considered.

The REF was exhibited at the following locations:

- Transport for NSW Information Centre, 388 George Street, Sydney NSW
- Ku-Ring-Gai Council Chambers, 818 Pacific Highway, Gordon NSW
- Lindfield Library, 265 Pacific Highway, Lindfield NSW.

In addition, the REF was available to be viewed electronically at the following websites:

- Transport for NSW website
- NSW Government 'Have your Say' website.

A community information session was held on 29 July 2014 in Lindfield.

2.1.1 Project information

Contact mechanisms for the proposal were established prior to the commencement of the exhibition period, including:

- a 24 hour information line (1800 659 770)
- a project email address – lindfieldsubstation@transport.nsw.gov.au
- postal address – Manager, Precinct and Place, PO Box K659, Haymarket NSW 1240.

All contact mechanisms are still available for any ongoing enquiries about the proposal and will be maintained throughout the construction phase. The information line will become the 24 hour Construction Response Line phone number and will be provided for urgent enquiries or complaints regarding construction activities.

2.1.2 Project website

During the exhibition period of the REF, a link to the proposal was established on the Transport for NSW website - http://www.transport.nsw.gov.au/projects-lindfield-substation. Information available on the website included:

- Project profile
- Project benefits
- The REF (available for download)
- Project newsletter (available for download)
- Artists impressions

- Community contact information
- Link to the feedback form
- Information on how to make a submission.

Throughout the pre-construction and construction phases, the project website will continue to be updated to reflect up-to-date information on the project and as a location where key project documentation will be publicly available.

2.1.3 Community information session

A community information session was held on 29 July 2014 between 4.00 pm and 8.00 pm at the Lindfield Seniors Centre and Community Hall, 259 Pacific Highway, Lindfield NSW. This location is approximately 210 metres from the proposed substation site. A series of display boards were provided around the room outlining the proposal and providing site diagrams and artists impressions. Six project team members were available to answer questions and provide information on the proposal including representatives from Transport for NSW and the environment team.

Seven members of the public attended the community information session.

2.2 Stakeholder and community engagement

Stakeholders, community members and Ku-Ring-Gai Council have had the opportunity to comment on the REF for the proposal. The community was invited to view the REF, attend the community information session and make a submission via the following avenues:

- doorknocks to 65 properties immediately surrounding the substation between 21 and 24 July 2014
- newspaper advertising in the North Shore Times on 23, 25 and 30 July and 6 August 2014
- a newsletter was delivered on 23 July 2014 to approximately 700 properties surrounding the substation and along the railway line to Killara Station
- phone calls were made to the following groups:
  - Friends of Ku-Ring-Gai
  - Friends of Lindfield
  - Lindfield Chamber of Commerce
  - Ku-Ring-Gai Chamber of Commerce
- emails were sent to the following groups and businesses in the local area:
  - Support Lindfield
  - St Albans Anglican Church
  - Cromehurst School
  - Ecole Ballet and Dance Theatre
  - Ku-Ring-Gai Council Library – Lindfield branch
  - Transdev Shorelink Buses

- stakeholder briefings (detailed further in section 2.2.2) were held with:
  - Ku-Ring-Gai Council
  - Sydney Trains
  - (NSW) Roads and Maritime Services.

2.2.1 Community feedback

The following contact was received from the community:

- phone calls received – 2
- emails received – 2
- submissions received – 4
- briefings with agencies and government stakeholders – 3
- residents home during doorknocks – 24.

2.2.2 Stakeholder feedback

Ku-Ring-Gai Council

Consultation with Ku-Ring-Gai Council was undertaken as follows:

- briefing to the General Manager and Director Strategy and Environment by the project team on 18 July 2014
- briefing to the Mayor by the project team on 23 July 2014.

Government Agencies

The following agencies were briefed as part of the exhibition of the REF:

- Sydney Trains was briefed at the NWRL Project Control Group Meeting on 17 July 2014
- (NSW) Roads and Maritime Service was briefed at the NWRL Traffic and Transport Liaison Group Meeting on 18 July 2014.

The community and stakeholder feedback on the proposal gathered as part of the exhibition period is presented in Figure 2.1, which shows a breakdown of the issues.

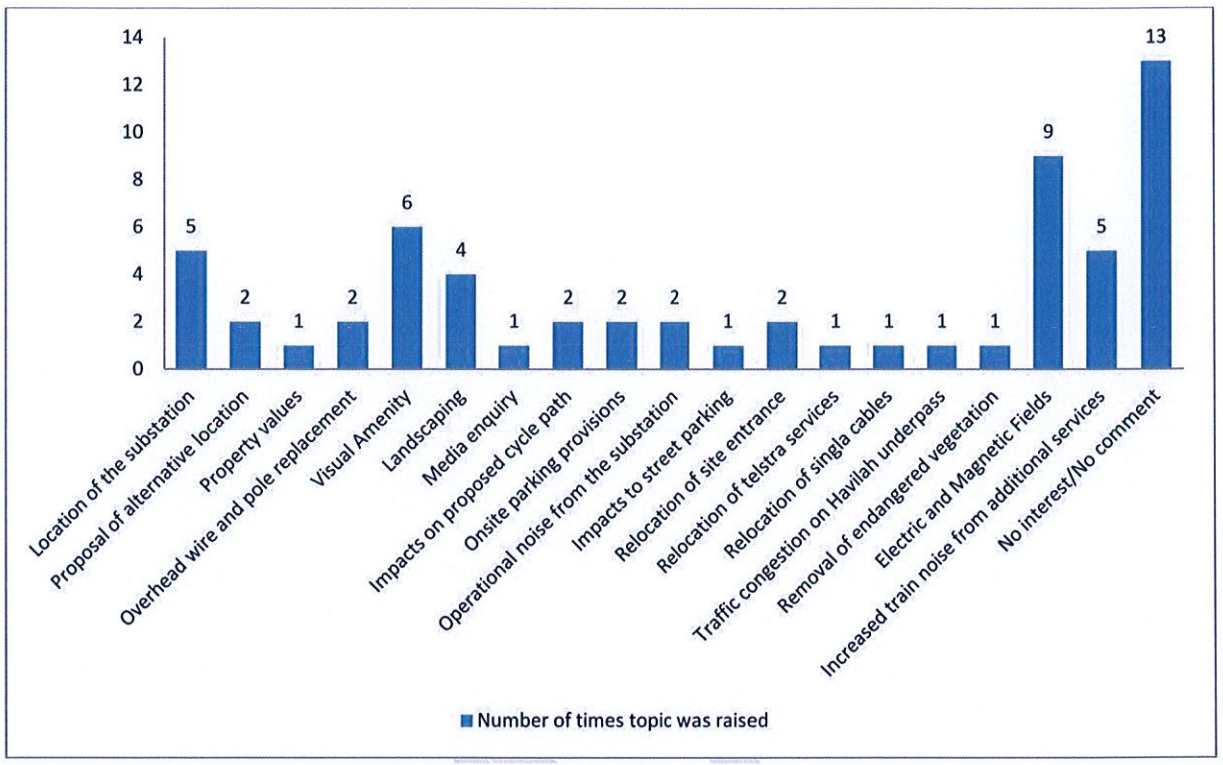

Figure 2.1 Feedback from community and stakeholders

2.3 Management of submissions

Four submissions were received during the REF exhibition period. The submissions received were reviewed by Transport for NSW and have been responded to in Chapter 3 of this report. It is considered that the period of exhibition provided was sufficient for the general public and interested parties to provide their input into the consultation process and raise any issues or concerns they might have with the proposal.

2.4 Proposed engagement following project determination

If the Lindfield Substation project is approved, consultation will continue with all relevant stakeholders through the approvals, pre-construction and construction phases of the project.

Transport for NSW intends to consult with owners/occupiers of properties immediately surrounding the substation site on the exterior finishes.

All other stakeholders will be provided with project updates by the following means:

- project newsletters at approvals and construction milestones (letterbox drop)
- website updates
- doorknocks where required
- community contact facilities (phone, email and post)
- project email list (subscription based).

Ongoing meetings and consultation with Ku-Ring-Gai Council and government agencies will occur where appropriate. This will ensure they remain informed about the project details and schedule and ensure ongoing lines of communication are established to allow ongoing input from these stakeholders.

3. Submissions review

3.1 Submissions details

Four submissions were received. No written submissions were received from community groups or government agencies.

Copies of the submissions received during the period for comment are contained in Appendix A.

The primary issues arising from the submissions included:

- Concern regarding the location of the preferred substation site, and consideration of alternative options
- Provision of car parking and staff amenities within the substation site
- Impacts on vegetation, in particular potential impacts on Blue Gum High Forest vegetation.

A response to these issues is set out in section 3.2.

3.2 Response to submissions

Table 3.1 below provides the following:

- A copy of all the submissions reproduced (summarised)
- A response to the issue or comments raised.

Table 3.1 Response to issues raised in submissions

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
Submission 1	Concern was raised regarding the quality and accuracy of the REF. The inconsistencies and errors identified in the submissions included: ▸ Many of the views shown in the REF are incorrectly labelled. For example, the view in Figure1.6 on page 7 is described as a view to the west whereas it is in fact almost to the south. ▸ Several maps in the REF, for example Map B in Figure 1.2a on page 3, show the terminating road in Lindfield Station connecting with the Down Shore at a point about 90 metres north-west of the station. In fact there is no such connection. ▸ The REF may imply in paragraph 6.6.1 on page 87 that the site drains westward toward the Lane Cove River. It doesn't. A culvert passing under the railway about 100 metres north-west of the proposed site drains eastward down Gordon Creek towards Middle Harbour. So does another culvert about 100 metres south-east of the proposal. ▸ The right-hand map on page 54 suggests that vehicles might use the Havilah underpass to reach the Pacific Highway after leaving the site but other maps suggest that the Strickland bridge can be used for all traffic.	Whilst all efforts were made during the preparation of the REF to provide accurate and consistent information throughout the report and technical studies, some inconsistencies and errors have been raised throughout the submissions process. These errors are considered to be minor in nature and Transport for NSW does not consider that they significantly impede the ability to assess the impacts of the proposal, or that they materially change the impact predictions or associated mitigation measures identified in the REF. With respect to Map B in Figure 1.2a on page 3 of the REF, it is acknowledged that the connection of the terminating down-track was shown in error and the road does not currently connect to this line. Additionally, with respect to the map on page 54 of the REF, it is proposed that both streets would be used for accessing the substation site. A detailed traffic management plan would be prepared as part of the detailed design which would identify the specific uses of these streets for various construction traffic during construction of the substation and ancillary works.

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
	The submission raised concern with the proposed location of the new substation noting that the preferred site 4 had several disadvantages, especially when compared to possible sites south of the Strickland Avenue bridge such as rejected site 5 including: ▸ The planned substation is visually obtrusive from Lindfield Avenue. ▸ The driveway opens onto Lindfield Avenue at a point where parking is at a premium. ▸ The chosen site apparently requires street power poles to be relocated. ▸ The chosen site would require an off-street vehicle turning facility so that vehicles need not reverse out of the site. ▸ The chosen site may require Telstra cables to be lowered or protected where they pass under. ▸ The chosen site requires railway signal cables to be relocated. ▸ The chosen site blocks the cycle path in the NSW Bike Plan 2010. The proposal notes that the identified 'site 5' (Chapter 4 of the REF) would provide a better option for the proposed substation site.	An options assessment was undertaken for the location and siting of the main substation itself. This is outlined in Chapter 4 of the REF. A number of sites were considered for the construction of the substation and were assessed against criteria outlined in section 4.1.2 of the REF including the following: ▸ available area (approximately 500 square metres in area is required for the construction of a substation) ▸ location of the high voltage feeders (electrical lines) in relation to the proposed substation location ▸ land profile – grade difference between the track level and street level, which determines the quantity of earthworks, embankments and/or retaining walls ▸ potential impact on adjoining residences – ie visual impact, access constraints ▸ need to minimise the amount of vegetation clearance required ▸ need to minimise the land acquisition required ▸ availability of vehicle accessibility to the site. The site considered as Option 5 is within the rail corridor between the down-track and Llewellyn Lane, Lindfield. Whilst the site exceeds the minimum area required for the construction of the substation, the construction would require considerable earthworks due to the extent of the grade difference of approximately four to six metres between the track and street levels and the need for embankments/retaining walls to be constructed. In addition, the location of a substation on this site has the potential to impact on access to private residents with driveways onto the street located directly across from the site. The site considered as Option 4 (the proposed project site) was considered the most favourable in relation to the assessment criteria outlined above. The site also exceeds the minimum area requirement however would require less earthworks as the site is level with Lindfield Avenue. Furthermore, the existing maintenance access to the rail corridor would be able to be relocated. This site was considered to be feasible and suitable for the construction of the substation as further described in the REF.

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
	Concern was raised in the submission that the proposal appears to be over-engineered, resulting in unnecessary visual impact and unnecessarily-high costs. The submission notes concerns regarding proposal elements such as the inclusion of: ▸ washroom amenities, including a toilet ▸ four car parking spaces. Concern was also raised regarding the overall scale and site area required for the construction of the proposal.	The proposed substation responded to design standard requirements for the proposed substation functions and is commensurate with similar existing Sydney Trains substations. The car parking spaces and amenities included would be utilised by operational and maintenance staff. Toilet facilities are required to provide Sydney Trains workers with minimal sanitary facilities when in attendance at the substation during their work duties. The car parking area is minimal and sufficient to support typical access and vehicle turning for maintenance and emergency vehicles to avoid use of residential and commuter off-street parking.
	Concern was raised regarding the naming of the 'reactor room' as shown on the plans provided for the substation, suggesting that this room should be renamed 'inductor room', to reduce possible community concerns regarding electromagnetic radiation.	With regard to this issue raised in the submission about renaming the reactor room, the Asset Standards Authority (ASA) Standards specify the equipment in question as a 'DC Reactor'. It is therefore not possible to swap the naming components of the Lindfield Substation design to be inconsistent with the ASA Standards.
Submission 2	Comment was made regarding the assessment of ecological impacts of the proposal. In particular, concern was raised about: ▸ the adequacy of the Ecology Report (Technical Paper 4) in connection with critically endangered of Blue Gum High Forest (BGHF) in the rail corridor; and ▸ the potential removal of BGHF and other endangered vegetation in the rail corridor. The submission raised concerns that the Ecological Report (and REF): ▸ did not frame its advice and conclusions concerning the existence and possible removal BGHF (and other endangered species) in the broader environmental context in which it exists; and ▸ failed to adequately investigate the extent of proposed aerial wire and pole work proposed for the rail corridor (notably, the Report seems to indicate that the possible extent of vegetation removal depends upon whether poles might need replacement. If that is the case, it would seem appropriate that a follow-up investigation of the poles should be completed as an integral part of the REF process to ascertain the extent to which any poles are to be replaced and more specific and meaningful consideration given to the extent to which this may impact upon critically endangered (or endangered) vegetation).	The ecological assessment has been prepared based on the worst case scenario of vegetation removal required to undertake the proposed works the subject of the proposal. The preference for the electrical works is that no power poles would need to be replaced and the existing poles are sufficient for the additional of the electrical works. In this instance, no BGHF would be required to be removed. These works would involve working from outside of the corridor (most likely with a cherry picker or similar) and installing the new overhead wires from this location. It is therefore likely that no impacts to biodiversity (i.e. endangered ecological communities (EECs) and fauna habitat) would occur as a result of the proposal. However, if, during the detailed design of the proposal, it is identified that some poles are required to be replaced due to degradation or instability, vegetation clearing (including potential BGHF EEC) would be restricted to only a small area (up to approximately three by three metre areas) surrounding each pole, to allow for the existing pole to be removed and replaced. The vegetation that may be removed would consist predominantly of exotic groundcover species with the occasional natives (mostly native grasses and occasional shrub) that occur within these small areas. The ecological assessment provided as part of the REF (Technical Paper 4) provides details regarding the current condition and structure of the BGHF within the study area (i.e. disturbed vegetation type was in low ecological condition. This vegetation community has been extensively modified by past land use and as a consequence has lost most of its native species and is significantly structurally modified with low density of native vegetation cover. Exotic species are dominant and have replaced the vast majority of the indigenous shrub layer and groundcover (refer to Table 3.2 of Technical Paper 4)).

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
		If vegetation is required to be removed as part of the replacement of pole(s) within the study area, this vegetation would consist predominantly of regrowth vegetation that occurs along the edges of the vegetation community consisting predominantly of exotic species and a small number of native species representative of the community. In the 'Mitigation measures' (Section 7 of Technical Paper 4) it states that *'The final offset strategy and quantum of offset requirement will be developed in consultation with TfNSW.'* This highlights that a follow-up investigation would occur during the detailed design of the proposal to determine the extent to which any of the poles are replaced and the appropriate offsets that may be required in consultation with Transport for NSW and in accordance with their 'Vegetation Offset Guide'. Other mitigation measures have been provided to minimise impacts to biodiversity and to limit the removal of EECS included: ▸ Clearing of vegetation would be minimised, to only vegetation that is absolutely required to be removed in order to undertake work. ▸ Replace power poles only where necessary and appropriate, so as to reduce impacts to biodiversity. ▸ Establish exclusion zones to protect vegetation and fauna habitat outside of the assessed and approved clearing limits, including the threatened ecological communities recorded within the study area. Vegetation to be retained are to be clearly defined on ground and 'no go zones' clearly signposted and fenced to prevent unauthorised clearing and vehicular and/foot traffic. No threatened species were identified during the ecological survey. Based on the desktop assessment and field verification the habitat available was considered likely to provide marginal habitat for a small number of threatened fauna species. The impacts associated with these species have been assessed in Appendix E of Technical Paper 4. It is considered unlikely that removal of this small area of marginal habitat would result in a significant impact to threatened species.

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
Submission 3	This submission noted the following with regards to the proposed location of the new substation: 'In recent times we have seen a significant determination in the train services for the stations between Chatswood and Gordon so I wonder why we should also suffer the presence of a substation that will benefit services that we do not currently have access. I would recommend that you reconsider this decision and locate such a facility in an area that currently benefit from more frequent, less crowded and faster services than those between Roseville and Killara enjoy.'	In future, Sydney Trains intends to operate increasing train services on the North Shore Line. A new traction power substation is required to allow for this increase in capacity and will support the delivery of the NWRL. Therefore, a new substation is required to be constructed to provide the additional power required for an increase in train movements. The proposed Lindfield Substation site has been identified as an appropriate location to provide the required power capacity for the North Shore Line in the future.
Submission 4	This submission raised the following issues with regards to the proposed substation: 'The first concerns the proposed cycling path along the North Shore railway line. It was raised at our meeting. The cycle path was first announced in the year 2000 as part of the NSW Government's Bike Plan 2010. The then government failed to deliver on the plan and announced a further proposal called The NSW Bike Plan. As mentioned at the meeting, the proposed substation would potentially impact adversely on any cycleway along the North Shore line. Could you outline the extent of staff amenities in the proposed substation, including the number of car parks? Also, how often would you expect these facilities to be used? Further, what consideration has been given to establishing the substation on the other side of the railway line, south of Strickland Avenue and adjacent to Llewellyn Street? From my discussions in the community, the site appears to provide a number of advantages, including less passing traffic and would potentially be moved away from any future cycle path. Was this option closely considered?'	A Traffic and Transport Assessment was prepared as part of the REF (Technical Paper 1). Section 3.5.4 of this assessment report identified that there is no separated cycling path adjacent to the substation site. The existing bicycle network in the Lindfield area is shown in Figure 3.3 of this report and does not identify any on- or off-road cycle routes adjacent to the proposed substation site. Lindfield Avenue is identified as a 'useful unmarked route' on this figure. The *Ku-Ring-Gai Bike Plan Final Report* (GHD 2012) was prepared for Ku-Ring-Gai Council with the objectives to review the current cyclist needs in Ku-Ring-Gai and provide a consistent standard of facilities for cyclists within the local government area. This plan identifies proposed cycle improvements including a proposed on-road cycle route along Lindfield Avenue/Strickland Avenue. The substation is proposed to be constructed entirely within the rail corridor. This assessment identifies that there would be minor impacts to pedestrians due to temporary closures of the footpath on the western side of Lindfield Avenue adjacent to the proposal site to allow the construction of the new substation driveway access and ancillary works. It is not anticipated that the proposed works comprising the substation and ancillary electrical works would impact on any proposed on-road cycleway in this location. The proposed substation responded to design standard requirements for the proposed substation functions and is commensurate with similar existing Sydney Trains substations. As detailed in section 5.2.1 of the REF, the proposed substation includes vehicle access and car parking spaces for approximately four vehicles. Section 5.2.6 of the REF also states that the proposed substation building would include a small office area with washroom amenities. The car parking spaces and amenities included would be utilised by operational and maintenance staff.

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
		Toilet facilities are required to provide Sydney Trains workers with sanitary facilities when in attendance at the substation during their work duties. The car parking area is intended to support typical access and vehicle turning for maintenance and emergency vehicles to avoid use of residential and commuter off-street parking. Ongoing maintenance of the substation and feeder lines is outlined in section 5.4.3 of the REF. For the substation building, it is anticipated that there would be up to one site visit per month by one person for maintenance and attendance for switching operations during power isolations. Overhead traction power feeder lines would be inspected in accordance with Sydney Trains operational requirements. An options assessment was undertaken for the location and siting of the main substation itself. This is outlined in Chapter 4 of the REF. A number of sites were considered for the construction of the substation and were assessed against criteria outlined in section 4.1.2 of the REF including the following: ▸ available area (approximately 500 square metres in area is required for the construction of a substation) ▸ location of the high voltage feeders (electrical lines) in relation to the proposed substation location ▸ land profile – grade difference between the track level and street level, which determines the quantity of earthworks, embankments and/or retaining walls ▸ potential impact on adjoining residences – i.e. visual impact, access constraints ▸ need to minimise the amount of vegetation clearance required ▸ need to minimise the land acquisition required ▸ availability of vehicle accessibility to the site. The site suggested by Submission 4 was considered during the option assessment process as Option 5. It is within the rail corridor between the down-track and Llewellyn Lane, Lindfield. Whilst the site exceeds the minimum area required for the construction of the substation, the construction would require considerable earthworks due to the extent of the grade difference of approximately four to six metres between the track and street levels and the need for embankments/retaining walls to be constructed. In addition, the location of a substation on this site has the potential to impact on access to private residents with driveways onto the street located directly across from the site.

Submission No.	Summary of issues raised in submission	Transport for NSW response to submissions
		The site considered as Option 4 (the proposed project site) was considered the most favourable in relation to the assessment criteria outlined above. Whilst the site also exceeds the minimum area requirement however would require less earthworks as the site is level with Lindfield Avenue. Furthermore, the existing maintenance access to the rail corridor would be able to be relocated. This site was considered to be feasible and suitable for the construction of the substation as further described in the REF.

4. Summary and conclusions

A total of four submissions were received on the proposal through the advertising of the REF documentation. The key issues raised in the public submissions included the following:

- concern regarding the location of the preferred substation site, and consideration of alternative options
- provision of car parking and staff amenities within the substation site
- impacts on vegetation, in particular potential impacts on Blue Gum High Forest vegetation.

In response to the submissions that were provided, Transport for NSW has deemed that no changes to the proposal are needed to address the issues raised. As described in section 2.4 of this report, Transport for NSW intends to consult with owners of properties immediately surrounding the site on the exterior finishes of the substation as part of the ongoing detailed design of the structure.

4.1 Next steps

Should the proposal be approved, Transport for NSW would make the submissions report and any conditions of approval publicly available. The local community would be notified by way of advertisements in local newspapers, community newsletters and the Transport for NSW website www.transport.nsw.gov.au/projects.

Correspondence would also be sent to people who made a submission which would include contact details for further information and an indication of the anticipated timing of construction work.

5. References

GHD (2012) *Ku-Ring-Gai Bike Plan Final Report*

Parsons Brinckerhoff (2014) *Lindfield Substation Review of Environmental Factors*

Appendix A

Submissions received

7/8/2014

Lindfield Substation
Principal Manager Planning and Assessments
Transport for NSW
Locked Bag 650
St Leonards NSW 2065
email: lindfieldsubstation@transport.nsw.gov.au

Dear Manager,

Feedback to Lindfield Substation R.E.F.

I have examined the Review of Environmental Factors for this proposal and wish to submit that the advantages of the preferred site have not been demonstrated. The REF should be undertaken again with attention to the following points.

1. The REF contains so many errors that the reader is forced to the conclusion that the REF was prepared carelessly. Some of the errors are:

    - Many of the views shown in the REF are incorrectly labelled. For example, the view in Figure 1.6 on page 7 is described as a view to the west whereas it is in fact almost to the south.
    - Several maps in the REF, for example Map B in Figure 1.2a on page 3, show the terminating road in Lindfield Station connecting with the Down Shore at a point about 90 metres north-west of the station. In fact there is no such connection.
    - The REF may imply in paragraph 6.6.1 on page 87 that the site drains westward toward the Lane Cover River. It doesn't. A culvert passing under the railway about 100 metres north-west of the proposed site drains eastward down Gordon Creek towards Middle Harbour. So does another culvert about 100 metres south-east of the proposal.
    - The right-hand map on page 54 suggests that vehicles might use the Havilah underpass to reach the Pacific Highway after leaving the site but other maps suggest that the Strickland bridge can be used for all traffic.

    While none of the above errors is directly relevant to the focus of the REF, if the REF was indeed prepared carelessly its conclusions should be regarded with caution.

2. The preferred site 4 has several disadvantages, especially when compared to possible sites south of the Strickland Avenue bridge such as rejected site 5:

    - The planned substation is visually obtrusive from Lindfield Avenue.
    - The driveway opens onto Lindfield Avenue at a point where parking is at a premium. Traffic flows around the Strickland and Middle Harbour intersection are complex but indicative average daily traffic is about 10000 vehicles. Lindfield Avenue is also a bus route. Many vehicles crossing the railway turn left from Strickland Avenue into Lindfield Avenue at speeds of perhaps 50 km/h and have limited distance in which to see railway vehicles using the site entrance opposite 4 Middle Harbour Road. This is a hazard.
    - The chosen site apparently requires street power poles to be relocated.
    - The chosen site would require an off-street vehicle turning facility so that vehicles need not reverse out of the site.
    - The chosen site may require Telstra cables to be lowered or protected where they pass under the site entrance.
    - The chosen site requires railway signal cables to be relocated.
    - The chosen site blocks the cycle path in the NSW Bike Plan 2010.
    - The chosen site is a considerable distance from the point where 1500VDC cables are to be connected to the catenary. The DC cables would have to be routed under the Strickland bridge somehow.
    - Some vehicles leaving the chosen site are apparently expected to use the Havilah underpass to reach the Pacific Highway. This underpass is chronically congested. Increasing its westbound traffic load is not desirable.

The candidate site 5 has none of these disadvantages.

3. One wonders whether the proposal is over-engineered, resulting in unnecessary visual impact and unnecessarily-high costs. Even though the REF estimates the substation will receive only about one visitor per month, the proposal has "washroom amenities" including a toilet. Such amenities would require regular cleaning. Are they appropriate in a rarely-visited facility of this nature?

   Again, the site has four car parking spaces plus an area apparently intended for trucks, arranged so that vehicles need not reverse out of the site. Why wouldn't one unloading area be adequate?

   Note that substations for the CBD and South-East light rail project, which is to operate vehicles drawing about 1500A at 700VDC, are only 80 square metres not including vehicle access space. The Lindfield proposal is claimed in the REF to need 500 square metres.

   The total height of the proposed substation seems to be about 2500 mm subfloor plus about 5 metres above floor level, totalling 7500 mm. Why is so much height required? The substation will be fully roofed and further protected by unclimbable fencing. In particular, the subfloor height seems unnecessary - computer rooms have been using false floors with about 300 mm below them, for many years.

4. I would suggest that a preferable site would be west of the railway and about 50 metres south of the Strickland bridge, approximately behind 231 Pacific Highway. The embankment beside the railway could be excavated from the rail side during a weekend possession. Construction access would then be through the existing gate at the intersection of Llewellyn St and Llewellyn Lane. Removal of only one tree would seem to be necessary. And the resultant substation would be inconspicuous to everyone except rail passengers. This site would be very close to the chosen point for connecting DC cables to the catenary.

5. I understand that recent substation proposals elsewhere have encountered community concerns about EM radiation. Whether or not this has happened at Lindfield, I would suggest that the "reactor room" could be renamed "inductor room", thereby allaying some possible concerns.

Dear Sir/Madam

Lindfield Sub-station Works – Environmental Factors

Preservation of Blue Gum High Forest ("BGHF") and other Vegetation in Rail Corridor

We are residents of Treatts Road Lindfield and, accordingly, live in close proximity to the rail corridor running between Lindfield and Killara stations.

The purpose of this email letter is to comment upon aspects of the Lindfield Substation Review of Environmental Factors ("REF") and, in particular, raise concern about:

- the adequacy of the Ecology Report (Technical Paper 4) in connection with critically endangered BGHF in the rail corridor; and
- the potential removal of BGHF and other endangered vegetation in the rail corridor.

BGHF in the corridor (particularly in the section between Treatts Road and Havilah street)

The Ecology Report (and REF) acknowledge the existence of BGHF in the corridor and the statutory protections that exist for such critically endangered species.

However, the Report does not appear to acknowledge or take into account that the rail corridor is part of a much larger remnant (comprising predominantly scattered remnant trees) forming bio-linkages in all directions..

Local residents have previously engaged a flora consultant, Ms Teresa James, to report on the extent of BGHF in our local area. Ms James has observed, inter alia:

" *The railway corridor provides a good north-south bio-linkage connecting denser patches of remnant vegetation at the Masada junior school site, Selkirk Park and a large park near Gordon (Rosedal Road). There is also a bio-link (comprising remnant trees) to the east along Treatts road to Seven Little Australians Park and to the west to the Pacific Highway and Killara Golf Cours*e."

The Ecology Report also does not appear to adequately take into account the fact that remaining patches of BGHF are generally now, by their nature, very small and surrounded by urban development (hence giving rise to their critically endangered status).

On this aspect, Ms James made the following observations in the context of the BGHF located in our local area (embracing the rail corridor):

"*Many of the remnants [of BGHF], similar to the subject site, persist mainly as clumps of large, mature trees often with the native understory replace by woody exotic species. The NSW Scientific Committee's Final Determination for the critically endangered listing of BGHF* ***specifically notes that the community includes such highly modified relics (paragraphs 9 and 11) and that these are important to retaining genetic diversity and resilience****." (emphasis added)*

Our Concerns

Against this brief background, we are very concerned that the Ecological Report (and REF):

- does not frame its advice and conclusions concerning the existence and possible removal of BGHF (and other endangered species) in the broader environmental context in which it exists;
- fails to adequately investigate the extent of proposed aerial wire and pole work proposed for the rail corridor. (Notably, the Report seems to indicate that the possible extent of vegetation removal depends upon whether poles might need replacement. If that is the case, it would seem appropriate that a follow-up investigation of the poles should be completed as an

integral part of the REF process to ascertain the extent to which any poles are to be replaced and more specific and meaningful consideration given to the extent to which this may impact upon critically endangered (or endangered) vegetation.)

* * * *

Please do not hesitate to contact us if you would like us to expand upon any of our comments.

Transport Minister

I would like to express my surprise at the decision to locate the new sub station at Lindfield.

In recent times we have seen a significant determination in the train services for the stations between Chatswood and Gordon so I wonder why we should also suffer the presence of a sub station that will benefit services that we do not currently have access.

I would recommend that you reconsider this decision and locate such a facility in an area that currently benefit from more frequent, less crowded and faster services than those between Roseville and Killara enjoy.

I would appreciate your response to this matter.

Thank you for providing your contact details following our meeting regarding the proposed Lindfield substation.

A number of issues regarding the project have been raised with me and it would be helpful if a reply would be provided.

The first concerns the proposed cycling path along the North Shore railway line. It was raised at our meeting. The cycle path was first announced in the year 2000 as part of the NSW Government's Bike Plan 2010. The then government failed to deliver on the plan and announced a further proposal called The NSW Bike Plan. As mentioned at the meeting, the proposed substation would potentially impact adversely on any cycleway along the North Shore line.

Could you outline the extent of staff amenities in the proposed substation, including the number of car parks. Also, how often would you expect these facilities to be used?

Further, what consideration has been given to establishing the substation on the other side of the railway line, south of Strickland Avenue and adjacent to Llewellen Street? From my discussions in the community, the site appears to provide a number of advantages, including less passing traffic and would potentially be moved away from any future cycle path. Was this option closely considered?

Thank you for your consideration of these matters.

Yours sincerely,

Appendix 3 Conditions of Approval

CONDITIONS OF APPROVAL

Lindfield Substation

Contents

General

1. Terms of Approval

a) The Project shall be carried out generally in accordance with the:
   i) Environmental Impact Assessment;
   ii) Conditions of Approval;
   iii) The Construction Environmental Management Framework v1.3; and
   iv) The Overarching Stakeholder and Community Involvement Plan.

b) In the event of an inconsistency between the Conditions of Approval (CoA) and the Environmental Impact Assessment, the CoA will prevail to the extent of the inconsistency. The Environmental Impact Assessment for this Project comprises the following documents:
   - *Review of Environmental Factors (Parsons Brinkerhoff, 22 July 2014)*
   - *Submissions Report (Parsons Brinkerhoff, 9 September 2014)*

2. Statutory Requirements

These CoA do not relieve the Proponent of the obligation to obtain all other licences, permits, approvals and landowner permissions from all relevant authorities or landowners as required under any other Act for the Project. The Proponent shall comply with the terms and conditions of such licences, permits, approvals and permissions.

Stakeholder and Community Liaison

3. Community Liaison Implementation Plan

a) The Proponent will apply the existing *Overarching Stakeholder and Community Involvement Plan OSCIP)* and accordingly a Community Liaison Implementation Plan (CLIP) will be produced for the Project.

b) The CLIP shall aim to provide a single, consistent consultation framework, for proactive communications management for the duration of the construction period. The CLIP shall comply with the obligations of these conditions and should include, but not necessarily be limited to:
   i) details of the protocols and procedures for disseminating information and liaising with the community and key stakeholders about construction activities (including timing and staging) and any associated impacts during the construction period;
   ii) details of the community liaison team appointed to manage and implement the plan;
   iii) procedures for identifying the local community likely to be affected by the Project, including identification of residences, businesses and other sensitive land uses and the specific communication needs of this community;
   iv) procedures for dealing with complaints or disputes and response requirements, including advertising the 24 hour construction response line number; and
   v) the provision of training for all employees, contractors and sub-contractors on the requirements of the CLIP.

c) The CLIP shall be prepared to the satisfaction of the Deputy Project Director, Stakeholder and Community Liaison at least 14 days prior to the commencement of construction and implemented during construction of the Project, or as agreed with the Deputy Project Director, Stakeholder and Community Liaison.

4. Community Notification and Liaison

a) The local community shall be advised of any activities related to the Project with the potential to impact upon them.

b) Prior to any site activities commencing and throughout the project duration, the local community is to be notified of works to be undertaken, the estimated hours of construction and details of how further information can be obtained (i.e. contact telephone number, website, newsletters etc) including the 24 hour construction response line number.
c) Construction-specific impacts including information on traffic changes, access changes, detours, services disruptions, public transport changes, high noise generating work activities and work required outside the nominated working hours must be advised to the local community at least 7 days prior to such works being undertaken or other period as required by EPA (where relevant to the issuing of an Environmental Protection Licence EPL)).

5. Website

a) The Proponent shall provide electronic information (or details of where hard copies of this information may be accessed by members of the public) related to the Project, on dedicated pages within its existing website, including:
    i) a copy of the documents referred to under Condition 1 of this approval and any documentation supporting modifications to the Approval or related approvals that may be granted in the future;
    ii) a copy of each relevant licence or permit required and obtained in relation to the Project;
    iii) Construction Compliance Reports;
    iv) details of construction information; and
    v) 24 hour contact telephone number for information and complaints.
b) Detailed updates of work progress and construction activities shall be regularly provided on the website.

6. Complaints Management

a) The Proponent shall implement the existing Complaints Management System and 24 hour construction response line number.
b) Details of all complaints received during construction are to be recorded on a complaints register.
c) For complaints received via phone or in person, a verbal response is to be provided to the complainant within 2 hours during construction times and within 24 hours during non-construction times (unless the complainant agrees otherwise).
d) For complaints received via email, an acknowledgement email should be sent as soon as possible but within 48 hours of receipt.
e) Information on all complaints received during the previous 24 hours and response times shall be forwarded to the ER each working day and the EPA as required by any applicable EPL.

Environmental Management

7. Environmental Representative

a) Prior to the commencement of construction, Transport for NSW (TfNSW) shall make available an Environmental Representative (ER) independent of the design and construction personnel of the Project, for the duration of the construction period for the Project.
b) The ER shall provide advice to TfNSW in relation to the environmental compliance and performance of the Project. The ER shall have responsibility for:
    i) considering and advising the Proponent on matters specified in these conditions and compliance with such;
    ii) reviewing and where required by TfNSW, providing advice on the Project's induction and training program for all persons involved in the construction activities and monitoring implementation;

iii) undertaking quarterly reviews of the Project's environmental activities to evaluate the implementation, effectiveness and level of compliance of on-site construction activities with authority approvals and licences, the CEMP and associated plans and procedures, including carrying out site inspections weekly, or as required by TfNSW;
iv) reporting monthly to TfNSW;
v) issuing a recommendation to the Proponent for work to stop immediately, if in the view of the ER circumstances so require;
vi) require reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts;
vii) reviewing corrective and preventative actions to ensure the implementation of recommendations made from the audits and site inspections;
viii) providing reports to the Proponent on matters relevant to the carrying out of the ER role as necessary;
ix) review and approve updates to the CEMP and other applicable management plans identified in the conditions of this approval; and
x) undertaking frequent inspections of site activities as required by TfNSW.

8. Environmental Reporting

a) The Proponent shall prepare an Environmental Report which addresses the following matters:
   i) compliance with the CEMP and these CoA;
   ii) compliance with any approvals or licences issued by relevant authorities for construction of the Project;
   iii) updates to the existing Compliance Tracking Program including documentation of evidence of compliance;
   iv) implementation and effectiveness of environmental controls. The assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP;
   v) environmental monitoring results, presented as a results summary and analysis;
   vi) details of any review and amendments to the CEMP resulting from construction during the reporting period; and
   vii) any other matter as requested by TfNSW.
b) The Proponent shall:
   i) submit a copy of the Environmental Report to the ER and TfNSW for review; and
   ii) as a minimum submit the report Quarterly in line with existing Compliance Tracking Program reports; and
   iii) provide 6 monthly summaries of the Environmental Report on the existing website.

9. Environmental Induction

Prior to the commencement of construction, all contractors shall be inducted by the Proponent on the key project interfaces and associated environmental risks and procedures.

10. Construction Environmental Management Plan

a) The Proponent shall prepare and implement a CEMP prior to commencement of construction which addresses the following matters:
   i) traffic and pedestrian management;
   ii) noise and vibration management,
   iii) air quality management (including dust suppression);
   iv) Indigenous and non-Indigenous heritage management;
   v) surface water and soil management ;
   vi) groundwater management
   vii) storage and use of hazardous materials;

viii) contaminated land;
ix) flora and fauna management; and
x) waste management.

b) The CEMP shall:
   i) comply with the conditions of this approval, conditions of any licences, permits or other approvals issued by government authorities for the Project, all relevant Acts and Regulations and accepted best practice management;
   ii) be prepared in accordance with
      - the *Guideline for Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004)*; and
      - the *Construction Environmental Management Framework v1.3. (TfNSW)*

c) The Proponent shall:
   i) consult with government agencies and relevant service/utility providers as part of the preparation of the CEMP;
   ii) submit a copy of the CEMP and associated sub-plans to the ER for review. The ER is to be given a minimum period of 7 days to review and endorse the CEMP;
   iii) review and update the CEMP at minimum 6-monthly intervals, and in response to any actions identified as part of the ER's activities; and
   iv) updates to the CEMP and associated sub-plans shall be made within 7 days of the completion of the review or receipt of actions identified by the ER review of the document.

d) The CEMP and associated sub-plans must be approved by TfNSW at least 14 days prior to the commencement of any construction work associated with the Project.

Infrastructure and utilities

11. Infrastructure and Utilities

a) The Proponent shall, prior to construction that risks affecting infrastructure and utilities, identify infrastructure and utilities potentially affected by construction activities to determine requirements for diversion, protection and/or support. This shall be undertaken in consultation with the relevant infrastructure and utility provider(s). Any alterations to infrastructure and utilities shall be carried out to the reasonable satisfaction of the relevant infrastructure and utility provider(s), and unless otherwise agreed to, at no cost to the infrastructure and utility provider(s).

b) The Proponent shall ensure that disruption to any services are minimised and shall be responsible for advising local residents and businesses affected prior to any planned disruption of service.

c) The Proponent shall prepare dilapidation surveys and reports (including movement prediction studies) on the condition of roads, footpaths, rail infrastructure facilities, adjacent tunnels, and utilities affected by construction and to the reasonable satisfaction of the infrastructure and utility owner(s). The Proponent shall carry out rectification work at the Proponent's expense and to the reasonable satisfaction of the owner.

Hours of Work

12. Construction Hours

a) Construction and demolition activities shall be restricted to the hours of 7:00 am to 6:00 pm (Monday to Friday); 8:00 am to 1:00 pm (Saturday) and at no time on Sundays and public holidays except for the following works which are permitted outside these standard hours:

i. any works which do not cause noise emissions to be more than 5dBA higher than Rating Background Level (RBL) (background) noise levels at any nearby residential property and/or other noise sensitive receivers;
ii. the delivery of plant, equipment and materials which is required outside these hours as requested by police or other authorities for safety reasons and with suitable notification to the community as agreed by the Principal Manager Environment;
iii. emergency work to avoid the loss of lives, property and/or to prevent environmental harm; and
iv. any other work in accordance with an Out of Hours Work Procedure and considered essential to the Project.

b) Alternative hours of construction may be approved through an EPL.

Construction Noise and Vibration

13. Construction Airborne Noise and Vibration

a) A construction noise and vibration management plan (CNVMP) shall be prepared that outlines the required management practises and procedures to reduce and control potential noise, ground vibration and ground-borne noise impacts during construction.
b) Construction noise and vibration mitigation measures implemented shall be in accordance with DECCW's *Interim Construction Noise Guideline July 2009*.
c) All construction works would be managed in accordance with the *Construction Noise and Vibration Strategy.*
d) The CNVMP shall include, but not necessarily be limited to:
   i. identification of construction activities that have the potential to generate noise and/or vibration impacts on surrounding land uses, particularly sensitive noise receivers;
   ii. details of what reasonable and feasible actions and measures shall be implemented to minimise noise impacts (including those identified in the Environmental Impact Assessment);
   iii. procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints;
   iv. where not otherwise subject to an EPL, an out of hours work protocol (OOHWP) for the assessment, management and approval of works outside the standard construction hours identified in this approval, including a risk assessment process under which the ER may approve out of hours activities deemed to be of low or to medium environmental risk.; and
   v. a description of how the effectiveness of actions and measures shall be monitored during the proposed works, clearly indicating the frequency of monitoring, the locations at which monitoring shall take place, recording and reporting of monitoring results and if any exceedance is detected, the manner in which any non-compliance shall be rectified.

14. Ground-borne noise

The Proponent shall undertake all relevant construction activities with the objective of not exceeding the following ground-borne noise criteria at residential receivers:

a) an internal LAeq(15min) of 40 dB(A) between 6:00 pm and 10:00 pm; and
b) an internal LAeq(15min) of 35 dB(A) between 10:00 pm and 7:00 am. Where these objectives may be exceeded, the Proponent shall develop and implement all reasonable and feasible noise mitigation measures with the aim of minimising ground-borne noise impacts.

15. Vibration Criteria

Vibration (other than from blasting) resulting from construction and received at any structure outside of the Project shall be limited to:

(a) For structural damage vibration – the acceptable vibration values set out in the German Standard DIN 4150: Part 3 – 1999 "Structural Vibration in Buildings: Effects on Structures"; and
(b) For human exposure to vibration - the acceptable vibration values set out in the *Assessing Vibration: A Technical Guideline* (DEC 2006). These limits apply unless otherwise approved by the EPA (where relevant to the issuing of an EPL).

16. Non-tonal reversing beepers

Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used on-site and for any out of hours work.

17. Noise Impact on Educational Facilities

Potentially affected pre-schools, schools, universities and any other affected permanent educational institutions shall be consulted in relation to noise mitigation measures to identify any noise sensitive periods, e.g. exam periods. As much as reasonably possible noise intensive construction works in the vicinity of affected educational buildings are to be minimised.

18. Piling

Wherever practical, piling activities shall be completed using non-percussive piles.

19. Operational Noise and Vibration

The mechanical and electrical plant and ventilation systems shall be designed and operated so as not to exceed project specific noise levels derived in accordance with the *NSW Industrial Noise Policy* (DECCW 2000) and acceptable vibration levels specified in *Assessing Vibration: A Technical Guideline* (DEC 2006).

20. Operational Noise Compliance Monitoring

a) Compliance monitoring shall be undertaken within 3 months of the commissioning of the mechanical and electrical plant and ventilation systems to evaluate the effectiveness of the operational noise and vibration mitigation measures to determine if any additional reasonable and feasible mitigation measures are needed that are consistent with the requirements of the *Industrial Noise Policy* (EPA 2000).
b) In the event that the compliance monitoring indicates that the operation of the Project, will lead to greater noise impacts than previously modelled, additional noise mitigation measures would be developed in consultation with relevant stakeholders and the affected receivers.

Contamination

21. Contamination

Land contamination shall be managed in accordance with the Contaminated Land Management Act.

22. Storage and Use of Hazardous Material

The CEMP is to document hazardous materials management measures that as a minimum will shall include:

a) the storage of hazardous materials, and refuelling/maintenance of construction plant and equipment to be undertaken in clearly marked designated areas that are designed to contain spills and leaks;
b) spill kits, appropriate for the type and volume of hazardous materials stored or in use, to be readily available and accessible to construction workers. Kits to be kept at hazardous materials storage locations, in site compounds and on specific construction vehicles. Where a spill to a watercourse is identified as a risk, spill kits to be kept in close proximity to potential discharge points in support of preventative controls;
c) all hazardous materials spills and leaks to be reported to site managers and actions to be immediately taken to remedy spills and leaks; and
d) training in the use of spill kits to be given to all personnel involved in the storage, distribution or use of hazardous materials.

Traffic

23. Traffic Management Plan

a) The Proponent shall undertake the works in accordance with a Roads and Maritime Services approved Traffic Management Plan (TMP) and the Works Authorisation Deed;
b) The Proponent will limit parking on local roads as far as reasonably practical; and
c) The TMP must as a minimum document the environmental management measures described in the EIA.

24. Traffic and Transport Liaison Group

The Proponent shall continue to consult with the existing Traffic and Transport Liaison Group throughout the construction of the works.

25. Access Arrangements

Emergency access to all properties and access to emergency facilities shall be maintained, unless otherwise agreed by the respective emergency service. Access to properties and services and bus passenger waiting areas shall be maintained during construction unless agreed with the property owner in advance.

Air Quality

26. Dust Emissions

All construction activities shall be carried out in a manner that minimises or prevents the emission of dust including the environmental management measures documented in the EIA:

Erosion and Sediment Control

27. Soil and Water Management Measures

a) A Soil and Water Management Plan (SWMP) shall be prepared. Soil and water management measures shall include as a minimum the environmental management measures documented in the EIA.

b) In addition the SWMP shall as a minimum, address the following matters:
   i. details of management measures to minimise soil erosion and discharge of sediment or water pollutants from the site including a strategy to minimise the area of bare surfaces during construction;
   ii. describe the location and capacity of erosion and sediment control measures through area-specific Erosion and Sediment Control Plans (ESCPs);
   iii. measures to handle and dispose of stormwater, effluent and contaminated water and soil;
   iv. details of the location and management measures of stockpiles;
   v. measures to direct seepage, spillage, contaminated water, fire fighting or other water which contains pollutant levels above the background concentrations of natural discharge points into sumps with pump out facilities;
   vi. measures for the use of water reclaimed or recycled on-site;
   vii. detailed erosion and sedimentation controls, sufficient to address the technical requirements for obtaining any relevant EPL, as relevant;
   viii. detailed description of water quality monitoring to be undertaken including base line monitoring, identification of locations where monitoring would be carried out and procedures for analysing the degree of contamination of potentially contaminated water;
   ix. contingency plans to be implemented in the event of fuel spills or turbid water discharge from the site;
   x. program for inspecting, reporting on and responding to the effectiveness of the sediment and erosion control system to ensure controls are being implemented efficiently; and
   xi. details on the preparation and implementation of progressive management measures as activities change.

Waste

28. Waste Management Plan

a) Prior to the commencement of construction a Waste Management Plan (WMP) shall be prepared which addresses the following matters:
   i. the environmental management measures in the EIA;
   ii. appropriate measures to re-use removed assets within the Sydney Trains network, subject to Sydney Trains approval;
   iii. appropriate measures to address the beneficial reuse of spoil, including spoil management targets and reporting;
   iv. waste handling and storage;
   v. disposal of wastes including cleared vegetation, contaminated materials, glass, metals and plastics, hydrocarbons (lubricants and fuels) and sanitary wastes;
   vi. procedures for classifying waste in accordance with OEH's Waste Classification Guidelines; and
   vii. procedures for the recovery of resources from waste where this is beneficial and does not harm the environment or human health, in accordance with the 'resource recovery exemptions' under clause 51 of the Protection of the Environment Operations (Waste) Regulation 2005.
b) The WMP is to demonstrate the manner in which a target of at least 90 percent of construction waste generated during site preparation and construction of projects is to be diverted from landfill and either recovered, recycled or reused.
c) The WMP is to address how 100 percent of usable spoil material will be recovered for beneficial use.

Lighting

29. Lighting Control

All permanent lighting for the Project shall be designed, installed and operated in accordance with the requirements of AS 1158 "Road Lighting", AS 4282 "Control of the Obtrusive Effects of Outdoor Lighting".

Miscellaneous

30. Graffiti and Advertising Control

Hoardings, site sheds, fencing, acoustic walls around the perimeter of the site and any structures built as part of the Project are to be maintained free of graffiti and advertising not authorised by the Proponent during the construction period.

31. Authorised Water Servicing Co-ordinator

The Proponent shall engage a Sydney Water authorised water servicing coordinator to oversee the design and construction of any works to the existing water or sewer mains.

Flora and Fauna

32. Replanting Program

a) Any cleared vegetation shall be replaced and/or offset. All vegetation planted on-site is to consist of locally endemic native species, unless otherwise agreed by TfNSW.
b) Any replanting must be undertaken in consultation with the relevant Council, where relevant, and/or the owner of the land upon which the vegetation is to be planted.
c) In the event of clearance to native vegetation an offset strategy in accordance with the requirements of Transport for NSW '*Vegetation Offset Guide*' is to be developed

33. Removal of Trees or Vegetation

Separate approval is required for the trimming, cutting, pruning or removal of trees or vegetation where the impact has not already been identified and approved in the EIA.

Heritage

34. Non-Indigenous and Indigenous Heritage – During Construction

a) The CEMP must include as a minimum an unexpected finds procedure that incorporates the environmental management measures documented in the EIA in relation to heritage.
b) Any significant findings of heritage shall be documented and then reported to the relevant authority and stakeholders for updating of the relevant heritage listing.

Urban Design and Landscaping

35. Urban Design and Landscape Report

a) Prior to the finalisation of detailed design the Proponent shall prepare an Urban Design and Landscape Report (UDLR) which addresses the following matters:
   i. materials, finishes, colour schemes and maintenance procedures including graffiti control for new buildings, walls, barriers and fences;
   ii. landscape treatments and street tree planting to integrate with surrounding streetscape;
   iii. total water management principles to be integrated into the design where considered appropriate;
   iv. design measures included to meet TfNSW's Sustainable Design Guidelines;
   v. ongoing maintenance responsibilities.
b) The UDLR shall be prepared in consultation with Councils, relevant authority stakeholders and endorsed by the existing Design Review Panel.

Sustainable Development

36. Greenhouse Gas Emissions

a) 100% of the greenhouse gas emissions from electricity used to operate the Project shall be incorporated into any offset strategy being developed for the NWRL project.
b) The greenhouse gas emissions of the Project shall be incorporated into any carbon foot-printing and subsequent reduction strategies for the NWRL project.
c) Energy efficiency measures shall be incorporated into the design and operation of the Project.

37. Pre-Construction Sustainability Report

a) Prior to commencement of construction, a Pre-Construction Sustainability Report shall be prepared to demonstrate how the sustainability initiatives identified in the EIA and relevant Contract requirements are to be met.
b) Where appropriate additional project-specific sustainability principles and targets shall be identified in the Pre-Construction Sustainability Report.
c) The Project should achieve a silver rating with the *TfNSW Sustainable Design Guidelines*.